

WHAT IS CLAIMED IS:

1. A method for treating a primary lung cancer or a metastatic cancer to the lung in an individual comprising the step
5 of:

delivering at least once to the respiratory tract of the individual via inhalation a nebulized liposomal aerosol comprising a dilauroylphosphatidylcholine liposome containing camptothecin or a derivative thereof in an amount sufficient to deliver a
10 pharmacologically effective dose of said camptothecin or derivative thereof to treat said cancer.

2. The method of claim 1, wherein said nebulized
15 liposomal aerosol is delivered via an inhalation regimen comprising twice a day for 5 consecutive days within a week for one or more consecutive weeks.

20 3. The method of claim 2, wherein a period of consecutive weeks is the first 8 weeks out of a 10 week period.

4. The method of claim 3, wherein the inhalation regimen is repeated after week 10.

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5. The method of claim 2, wherein said nebulized liposomal aerosol is inhaled for 60 minutes during each period of inhalation in the regimen.

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6. The method of claim 1, wherein concentration of said camptothecin or derivative thereof in said dilauroylphosphatidylcholine liposome comprising said liposomal aerosol does not exceed 1.0 mg/ml.

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7. The method of claim 6, wherein the concentration of said camptothecin or derivative thereof in said dilauroylphosphatidylcholine liposome comprising the liposomal aerosol is about 0.4 mg/ml.

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8. The method of claim 1, wherein a ratio of camptothecin or derivative thereof to dilauroylphosphatidylcholine in said liposome comprising the liposomal aerosol is about 1:10 to
5 about 1: 50 wt:wt.

9. The method of claim 1, wherein said dose of camptothecin or derivative thereof delivered via inhalation is about
10 0.26 mg/m²/day to about 1.04 mg/m²/day.

10. The method of claim 1, wherein said camptothecin derivative is 9-nitro-camptothecin, 9-amino-camptothecin or 10,11-
15 methylenedioxy-camptothecin.

11. The method of claim 1, wherein said metastatic cancer is a sarcoma, a melanoma, lung cancer endometrial cancer,
20 cervical cancer, pancreatic cancer, thyroid cancer or trophoblastic cancer.

12. A nebulized liposomal aerosol comprising
dilauroylphosphatidylcholine and camptothecin or a derivative
thereof suitable for delivery of said camptothecin or derivative
5 thereof to the respiratory tract of an individual upon inhalation of
said nebulized liposomal aerosol, wherein concentration of said
camptothecin or derivative thereof in said
dilauroylphosphatidylcholine liposome does not exceed 1.0 mg/ml.

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13. The nebulized liposomal aerosol of claim 12,
wherein the concentration of said camptothecin or derivative
thereof in said dilauroylphosphatidylcholine liposome is about 0.4
mg/ml.

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14. The nebulized liposomal aerosol of claim 12,
wherein a weight ratio of camptothecin or derivative thereof to
dilauroylphosphatidylcholine in said liposome is about 1:10 to about
20 1:50 wt:wt.

15. The nebulized liposomal aerosol of claim 14,
wherein said camptothecin derivative is 9-nitrocamptothecin and
said weight ratio is about 1:50.

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16. The nebulized liposomal aerosol of claim 12,
wherein said camptothecin derivative is 9-nitro-camptothecin, 9-
amino-camptothecin or 10,11-methylenedioxy-camptothecin.

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17. The nebulized liposomal aerosol of claim 12,
wherein said camptothecin or derivative thereof treats a primary
lung cancer or a metastatic cancer to the lung in the individual upon
15 delivery to the respiratory tract.

18. The nebulized liposomal aerosol of claim 17,
wherein said metastatic cancer is a sarcoma, a melanoma, lung
20 cancer endometrial cancer, cervical cancer, pancreatic cancer,
thyroid cancer or trophoblastic cancer.

19. The nebulized liposomal aerosol of claim 12,
wherein said dilauroylphosphatidylcholine-camptothecin or
derivative thereof liposome comprising said liposomal aerosol is
5 produced by the following steps:

dissolving said camptothecin or derivative thereof in a
volume of DMSO to produce dissolved camptothecin or derivative
thereof;

dissolving dilauroylphosphatidylcholine in an
10 appropriate solvent to produce a dissolved
dilauroylphosphatidylcholine;

combining said dissolved camptothecin or derivative
thereof and said dissolved dilauroylphosphatidylcholine to produce
a solution, said solution having a DMSO concentration not exceeding
15 about 5% of the total volume of said solution wherein a weight ratio
of said camptothecin or derivative thereof to said
dilauroylphosphatidylcholine in said solution is in a range of about
1:10 wt:wt to about 1:50 wt:wt of said solution;

evaporating said solvents from said solution to produce
20 a powder; and

redissolving said powder in sterile water to produce a suspension, wherein a concentration of said camptothecin or derivative thereof in said sterile water does not exceed said 1.0 mg/ml.